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A.D. 1885, *9th October.* N° 12,037.

PROVISIONAL SPECIFICATION.

Improvements in Preparing Wheaten Meal, and in Making Entire Wheat-meal Bread, and in the Preparation of Leaven.

We, Arthur Burton Lester, of 58, Katesgrove Lane, Reading, Baker, and Albert Meaby of 82, Queen's Road, Reading, Master Baker, both in the County of Berks, do hereby declare the nature of our invention for Improvements in preparing Wheaten Meal, and in making entire Wheat-meal Bread, and in the preparation of leaven, to be as follows:—

This invention is the fruit of efforts and experiments extending over several years.

As a result, it is claimed that a fully scientific system of making wheat-meal bread has been discovered, by means of which definite and exact rules can be laid down for the certain production of the most wholesome, digestible and nutritious bread.

The system necessarily embraces the production of Wheaten Meal, and this meal is also adapted for porridge, pastry, cakes and biscuits.

Its immense superiority for all these purposes over the entire wheaten flour or meal at present in use, and its complete freedom from the objections that attach to them, is asserted with the utmost confidence.

When made into bread or biscuit it is sufficiently cohesive and without excessive dryness or the undesirable tendency to crumble, which characterises most kinds of entire wheat-meal bread.

Being specially rich in gluten, it requires no admixture of fat to ensure cohesion and softness of external surface or crust.

It is palatable, presentable, easy to cut, thoroughly digestible, can be soaked or toasted and does not irritate the intestines.

It can be made in any size or shape required, is not expensive, keeps well and does not require any special kind of oven or temperature in baking.

It can be made and is made by us, without being touched by hand, in any part of the process. It is thus specially adapted for large bakeries where steam power and machinery are employed.

It is however equally suitable for family use. It makes a delicious and most nourishing porridge, or custard or gruel and is unsurpassed as a food for children or invalids.

[*Price 6d.*]

The system has five distinct stages or processes, of which three are required to prepare the meal, and the remaining two to convert it into bread.

They are as follows:—

1. "PREPARATION OF THE WHEAT FOR THOROUGH DISINTEGRATION."

The wheat is first soaked in water for 36 hours at a temperature of about 62 degrees Fahrenheit.

It is then drained for two days on canvass or in some other suitable manner to gradually remove part of the superfluous moisture.

It is then dried at a temperature not exceeding 100 degrees, and when dry is ground or pulverized in the ordinary way and converted into meal.

2. "TREATMENT OF THE MEAL."

The meal is now sifted in seives specially adjusted to the degree of fine-ness required, so as to eliminate about 18 per cent of the bran.

The meal is then baked or roasted in air-tight vessels at a temperature of 280 to 300 degrees Fahrenheit, whereby the starch it contains is changed into dextrine.

The meal is now prepared and ready for use in porridge or gruel or for bread-making.

3. "BREAD-MAKING."

The process of converting the meal into bread commences with a special system of causing fermentation, viz:

We take the 18 per cent of bran (or thereabouts) which had been separated from the meal and boil it for two hours.

This boiling extracts the gluten and starch left in the bran and yields a thick gelatinous fluid. We thin this fluid down with water till it attains a temperature of 70 degrees.

The liquor is now strained and the solid matter, which is the cellular fibre of the bran, is rejected.

The cellular fibre is the portion of the bran which is so irritating to the stomach.

A small portion of the original wheat is now mashed at a temperature of 170 degrees or thereabouts and is mixed with the remaining portion of the liquor which is then ready for fermentation.

A small quantity of a strong decoction of hop is then added which causes the whole of the foregoing substance to ferment or leaven.

This fermentation takes about 4 hours to complete.

Sufficient meal is now added to form a dough of the usual consistency.

The dough is thoroughly mixed, and allowed to rise in the usual way, and then baked at a temperature of about 400 degrees.

The result of these several processes is that an entire wheaten bread is produced of a quality absolutely unsurpassable, and with an entire absence of variability, and free from all the objections which attach to that made by the ordinary methods.

Dated this 9th day of October 1885.

S. S. BROMHEAD,
Agent.

COMPLETE SPECIFICATION.

Improvements in Preparing Wheaten Meal, and in Making Entire Wheat-meal Bread, and in the Preparation of Leaven.

We, ARTHUR BURTON LESTER of 58 Katesgrove Lane, Reading, Baker, and ALBERT MEABY of 82, Queen's Road, Reading, Master Baker, both in the County of Berks, do hereby declare the nature of our invention for IMPROVEMENTS IN PREPARING WHEATEN MEAL, AND IN MAKING ENTIRE WHEAT-MEAL BREAD, AND IN THE PREPARATION OF LEAVEN, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention is the result of a long series of efforts and experiments, whereby a thoroughly scientific system of making wheatmeal, (applicable also to the preparation of meal from other cereals,) and of producing wheat-meal bread, and leaven, has been discovered, and by means of which, definite and exact rules can be laid down for the certain production of the purest most palatable digestible and nutritious bread of unvarying quality.

The system employed necessarily embraces the production of wheaten-meal, of the very best kind, which is far superior to any heretofore produced, in regard to it glutenous nitrogenous and nutritious qualities, and is therefore especially valuable for biscuits, cakes pastry, porridge and as the basis of prepared food for young children and invalids.

Not only is it immensely superior as a food for man to the entire wheaten meal or flour at present in use but it is entirely free from the objectionable qualities that attach to the various samples of so-called whole wheat meal at present so largely consumed by the Public.

Being composed of the entire wheat minus only a portion of the cellular fibre, it is especially rich in gluten and when made into bread is therefore not dry, friable or liable to crumble, nor is the crust of a hard, flinty nature. It is not irritating to the stomach nor indigestible but the reverse, and while it can be eaten quite new with impunity, it will keep many days without danger of turning sour, and without excessive desiccation. It can be made in any shape preferred, does not require special oven's, is easy to cut, can be soaked, toasted or fried, can be made in the domestic Kitchen, or in the Machine bakery without being touched by hand in any part of the process.

The system has four distinct stages of which two are required for the preparation of the meal, one for the formation of leaven, and one for converting the meal into bread.

They are as follows.

1. PREPARATION OF THE WHEAT FOR THOROUGH DISINTEGRATION.

The wheat is first soaked in water for 36 hours at a temperature of about 62 degrees Fahrenheit.

It is then drained for two days on canvas or in some other suitable manner to gradually remove part of the superfluous moisture.

It is then dried at a temperature not exceeding 100 degrees, and when dry is ground or pulverized in the ordinary way and converted into meal.

2. Treatment of the Meal.

The meal is now sifted in seives specially adjusted to the degree of fine-ness required, so as to eliminate about 18 per cent of the bran.

The meal is then baked or roasted in air-tight vessels at a temperature of 280 to 300 degrees Fahrenheit, whereby the starch it contains is changed into dextrine.

The meal is now prepared and ready for use in porridge or gruel or for bread or biscuit making.

3. Preparation of the Leaven.

The next process before commencing the manufacture of bread is a special method of preparing leaven and procuring fermentation, as follows;

We take the 18 per cent of bran (or thereabouts) which had been separated from the meal and boil it for two hours.

This boiling extracts the gluten and starch left in the bran, and yields a thick gelatinous fluid. We thin this fluid down with water keeping it at a temperature of about 70 degrees.

The liquor is now strained, and the solid matter which is the cellular fibre of the bran is rejected. This cellular fibre is the only portion of the wheat we reject, and is the indigestible part of the bran, usually left in the ordinary brown bread, which irritates the stomach and intestines of those who consume it, and has no nutritious properties whatever.

A small portion (say about 3 pints to each sack of meal) of the original wheat is now mashed at a temperature of 170 degrees, or thereabouts, and is mixed with the remaining portion of the liquor before described, which is then ready for fermentation.

A strong decoction of hop is then made by infusing one ounce of hops in a gallon of water and a small quantity of this decoction is added to the above liquid. After the two are mixed, light and air are excluded, and the whole immediately commences to ferment or leaven.

It is important that the temperature around the fermenting tub should not be less than 55 °/₀ or more than 65 °/₀. This fermentation takes about 4 hours to complete, and there is then prepared ready for use, an efficient yeast three pints of which are sufficient to leaven a sack of meal.

In addition to the manifest simplicity and economy of this method of preparing yeast there are two other advantages connected with its use of great importance to the practical baker, viz, (1) it does not require to be first mixed into "sponge" as is the case with ordinary yeast and (2), it will not spoil as the "sponge" does, if not immediately made use of. This portion of our invention is therefore of vast importance apart altogether from the question of whole-meal bread.

4. Bread Making.

To effect the process of bread-making sufficient leaven is now added to a quantity of our meal to form dough of the usual consistency. This dough is then thoroughly mixed and allowed to rise in the usual way and is then baked at a temperature of about 400 degrees. The leaven is mixed at once with the whole of the meal, no preliminary "sponge" being required. The result of these various processes is that a pure Whole-meal wheaten bread is produced of a kind absolutely unsurpassable for wholesomeness, digestibility and nutritious qualities, and especially rich in gluten and nitrogenous constituents, and free from all the objections that attach to the entire wheaten bread made by the ordinary methods.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed we declare that what we claim is:

1. A method of preparing from wheat (or other cereals) separately or in combination, a specially digestible and nutritious meal, cooked in closed vessels, such meal being suitable for porridge or gruel or for biscuit or bread-making and other purposes as herein described and set forth.

2. A method of preparing leaven for the leavening of dough or bread (without any admixture of barm or chemicals) by combining an infusion of hop with a liquor made from wheat or the products of wheat as herein set forth and explained.

3. The application of the above named meal to the processes of biscuit or bread-making or to various preparations of gruel or food, either with or without the leaven herein described.

Dated this 28th day of January 1886.

S. S. BROMHEAD,
Agent.

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